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File 11-1

# MALARIA CONTROL IN WAR AREAS

## MONTHLY REPORT

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DPM

JUNE, 1943



FEDERAL SECURITY AGENCY  
U. S. PUBLIC HEALTH SERVICE  
ATLANTA, GEORGIA



TABLE I		MCWA LARVICIDE AND MINOR DRAINAGE PROJECTS										JUNE 1 - 30, 1943	
STATE	Areas in Operation	War Establishments Protected	LARVICIDAL WORK					OTHER WORK			Total	Total	
			Larvicide Used		Surfaces Treated Acres	Ditching Cu.Yds.	Ditching Lin.Ft.	Cleaning Lin.Ft.	Clearing Acres	Water Surf. Eliminated Acres	Man	Men	
			Oil Gals.	Paris Green Lbs.							Hours	Employed	
Alabama	5	64	583	5	39.0	1,611	6,248	16,610	9.5	1.2	7,226	40	
Arkansas	15	63	17,182	1,325	1,938.5	1,206	15,546	150,475	44.5	5.0	29,584	150	
California	4	11	7,508	---	601.8	---	2,784	11,340	0.9	18.8	4,957	24	
D. C.	1	23	40	---	0.4	206	13,386	14,662	2.6	1.3	4,684	24	
Florida	10	91	4,939	322	512.1	2,991	51,544	201,760	7.9	116.2	34,105	169	
Georgia	13	93	234	2,022	2,393.8	1,309	4,917	190,260	57.1	1.5	28,557	140	
Illinois	2	54	1,120	90	109.4	200	1,550	2,925	0.5	0.9	4,028	21	
Indiana	1	40	---	---	---	35	70	6,325	1.3	0.9	2,224	10	
Kentucky	5	48	539	---	33.0	369	3,359	240,170	9.6	2.0	11,286	57	
Louisiana	8	71	73,453	7,672	6,248.6	1,982	18,732	55,493	104.1	1.3	67,229	355	
Maryland	2	21	---	---	---	21,237	2,980	10,597	1.6	2.4	4,572	19	
Mississippi	8	50	6,168	38	249.6	796	11,428	119,511	103.4	8.2	22,160	112	
Missouri	3	24	1,051	79	156.3	1,518	2,350	21,550	53.7	22.6	6,651	32	
North Carolina	10	69	9,695	---	314.7	1,501	29,405	356,222	104.1	52.5	37,346	180	
Oklahoma	5	21	3,241	---	105.6	181	15,206	217,546	8.9	2.7	8,583	46	
Puerto Rico	6	22	1,469	6,935	3,534.1	---	269,262	171,346	33.2	9.4	61,005	402	
South Carolina	20	101	19,787	205	1,409.7	3,377	17,154	1,284,927	244.1	7.8	48,630	247	
Tennessee	8	69	23,968	732	813.3	321	5,995	45,935	9.3	0.1	14,894	67	
Texas	14	140	28,900	42	1,196.7	2,871	36,582	215,956	73.2	22.7	45,926	240	
Virginia	4	83	8,582	---	254.3	2,076	158,234	10,468	43.9	---	29,003	165	
Total	144	1,143	208,439	19,467	19,910.9	43,787	666,732	3,344,078	913.4	277.5	471,650	2,500	
May Total	137	970	139,486	9,295	14,759.3	74,426	522,869	2,529,818	802.0	244.7	445,750	2,531	
Total Fiscal Year 1943	226	1,161	1,876,607	152,267	198,208.0	---	5,749,480	20,981,049	11,671.0	5,441.0	4,993,444	---	

MCWA MAJOR DRAINAGE PROJECTS												JUNE 1 - 30, 1943	
STATE	No. of Projects	Clearing Brushing Acres	Channel or Ditch Cleaning Lin.Ft.	Hand	New Ditching Lin.Ft.      Dynamite		Total Cu.Yds.	Pill Cu.Yds.	Ditch Lining Sq.Ft.   Lin.Ft.		Underground Drains Lin.Ft.	Water Surf. Eliminated Acres	Total Man Hours
Alabama	2	6.0	2,000	150	---	4,080	5,910	468	---	---	---	31	5,116
Arkansas	1	1.0	---	---	---	1,400	---	---	---	---	---	---	208
Florida	1	1.0	7,500	---	---	7,500	---	---	---	---	---	300	1,724
Mississippi	2	---	---	2,765	---	---	486	958	---	---	12	7	4,573
North Carolina	4	84.9	75,874	12,459	2,900	---	10,544	249	---	---	---	28	17,483
Puerto Rico	2	3.0	1,300	1,500	---	---	6,265	---	---	---	---	---	40,264
South Carolina	6	15.5	30,081	5,208	3,400	5,300	9,618	351	2,207	952	---	9	12,404
Tennessee	3	4.0	---	1,950	---	---	577	---	832	275	---	4	2,348
Texas	4	1.6	3,750	2,320	3,535	---	7,432	370	---	---	---	131	6,156
Virginia	2	2.8	9,920	1,765	---	---	296	---	6,921	1,908	168	---	4,655
Total	27	119.8	130,425	28,137	9,835	18,280	41,098	2,396	9,960	3,135	180	510	94,931
May Total	42	68.3	195,943	51,888	7,649	45,055	82,547	2,935	4,178	2,550	1,656	742	138,183
Total Fiscal Year 1943	68	1,269.0	1,824,602	733,848	44,789	187,644	454,547	60,009	37,026	12,534	7,005	2,720	1,257,104

\* Total cubic yards of excavation often not shown on Progress Reports.

MCWA PERSONNEL ON DUTY ON JUNE 30, 1943 AND TOTAL PAYROLL FOR MONTH OF JUNE												JUNE 1 - 30, 1943		
STATE	Commissioned		Prof. & Sci.		Sub-Prof. (1)		C. A. P.		Custodial		Total		Percent of Total	
	No.	Pay	No.	Pay	No.	Pay	No.	Pay	No.	Pay	No.	Pay	No.	Pay
Alabama	3	823	3	812	2	365	2	410	59	7,401	69	9,811	1.9	2.1
Arkansas	5	1,435	2	633	23	4,561	4	704	137	18,056	171	25,389	4.6	5.3
California	1	200	-	---	-	413	-	229	---	1,621	1	2,463	0.3	0.5
D. C.	2	674	2	369	3	550	3	307	21	2,176	31	4,076	0.8	0.9
Florida	3	794	6	1,692	29	5,627	4	750	231	29,305	273	38,168	7.4	8.0
Georgia	1	284	5	1,342	39	6,911	5	770	100	13,175	150	22,482	4.0	4.7
Illinois	3	863	1	365	5	974	2	391	13	1,137	24	3,730	0.6	0.8
Indiana	1	284	-	---	1	183	-	---	10	1,354	12	1,821	0.3	0.4
Kentucky	2	567	4	1,321	14	2,237	3	556	45	6,003	68	10,684	1.8	2.3
Louisiana	7	2,025	8	2,243	38	7,495	6	1,263	365	47,580	424	60,606	11.4	12.8
Maryland	-	---	-	---	2	477	2	410	20	2,664	24	3,551	0.6	0.7
Mississippi	2	616	3	791	12	2,555	2	410	124	15,736	143	20,108	3.9	4.2
Missouri	3	627	4	1,181	11	1,971	1	309	33	3,503	52	7,791	1.4	1.6
North Carolina	5	1,418	9	2,653	14	2,473	3	574	296	37,819	327	44,937	8.8	9.5
Oklahoma	2	576	-	---	5	790	-	---	37	4,584	44	5,950	1.2	1.3
Puerto Rico	6	*	-	*	9	*	5	*	649	*	669	30,183	18.1	6.4
South Carolina	4	1,147	8	2,146	37	6,600	5	738	304	39,352	358	49,983	9.7	10.5
Tennessee	4	1,135	2	477	8	1,267	2	428	80	10,173	96	13,480	2.6	2.8
Texas	5	1,276	8	2,426	29	6,891	3	647	251	32,014	296	43,254	7.9	9.1
Virginia	2	567	2	688	17	2,954	2	560	178	22,230	201	26,999	5.4	5.7
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Florida	-	---	1	319	20	3,512	2	310	---	---	23	4,141	0.6	0.9
Georgia	-	---	1	319	11	1,629	1	164	---	---	13	2,112	0.4	0.4
Louisiana	-	---	-	---	22	3,929	2	129	---	---	24	4,058	0.6	0.9
South Carolina	1	284	-	132	12	2,004	2	263	2	296	17	2,979	0.5	0.6
Texas	-	---	2	355	8	902	1	73	20	2,517	31	3,847	0.8	0.8
H. Q. & Dist. (2)	41	13,230	14	3,175	20	3,334	80	11,372	8	989	163	32,100	4.4	6.8
Total	103	28,825	85	23,439	391	70,604	142	21,967	2,983	299,685	3,704	474,703	100	100
Percent of Total	2.8	6.5	2.3	5.3	10.6	15.9	3.8	4.9	80.5	67.4	100	100		

\* Figures not available

(1) Includes Entomological Inspectors

(2) Includes Headquarters and District offices, malaria survey, special investigations and employees temporarily attached to Headquarters pending assignment to States.



MONTHLY REPORT  
Malaria Control in War Areas  
June 1943

### Entomology

Anopheles quadrimaculatus production was reported during June from all of the States in which regular control projects are to be undertaken in 1943. The presence of Anopheles quadrimaculatus was indicated in 344 of the 640 control zones.

Weekly M-7 reports on the densities of vectors are now being received in the headquarters office from 442, or 69 percent of the control zones. On the basis of entomological findings, larvicidal work was discontinued during the month in several areas because of the scarcity of quadrimaculatus larvae and the low populations of adult quadrimaculatus as indicated by natural resting place collections. On the other hand, it was found necessary to begin control operations in a number of areas which were maintained only on an inspectional basis during the 1942 season.

A continuation of the graph presented in the May report showing comparative densities of adult anopheline vectors in stations inside or immediately adjacent to the protected activities ("A" stations) as compared to those in stations farther removed is shown below. Very high density counts have been reported from some stations of large size, such as barns, stables, etc., in areas where quads are abundant. To prevent these from unduly influencing the record, counts of over 100 females have been arbitrarily reduced to 100 for the purpose of this chart. Fifteen inside and 24 outside counts were thus reduced in preparing this June record.

### Larvicide and Drainage

During the month a total of 124 larvicidal projects were in operation in 19 States. Approximately 20,000 surface acres of ponds and ditches were treated with 208,500 gallons of larvicide and 20,000 pounds of paris green, and over 900 acres of pond and ditch banks cleared. Minor ditching completed in June amounted to 666,700 lineal feet, and 3,344,000 lineal feet of ditch were cleaned. Two thousand five hundred men were employed, with 471,650 man hours expended.

The use of dynamite for ditch construction continued to play a considerable part in the MCWA program, 35,000 pounds, costing \$4,600 having been purchased in the month of June. Three dynamiting projects were initiated in Alabama during the month.

Four machine ditching projects were in operation: Montgomery, Alabama; Fort Bragg, North Carolina; Wilmington, North Carolina; and Walterboro, South Carolina.

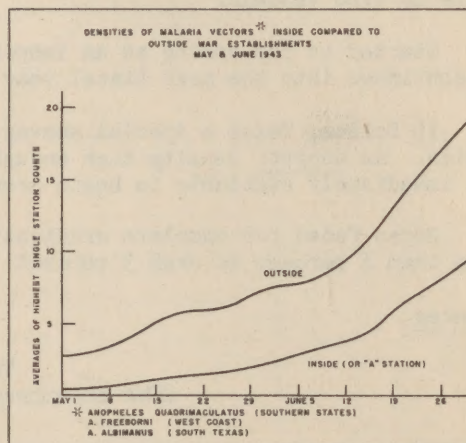
### Airplane Dusting

The airplane dusting program went into full swing during the month. Projects were inaugurated at Jackson Barracks, near New Orleans, on June 2; Newport, Arkansas on June 17; Walnut Ridge, Arkansas on June 18, and at Greenville, Mississippi on June 16. In addition, preparations were made for the early initiation of projects at Memphis, Tennessee; Lake Charles, Louisiana; Alexandria, Louisiana; and on the Potomac River near Washington, D. C.

A considerable amount of equipment was assembled for use in treating the water chestnut infested areas of the Potomac River. Small airplane engine-propelled boats were purchased for the necessary inspection work. These boats are capable of moving through the dense growth of water chestnut as there are no moving parts under water to become fouled.

### Maps

The mapping section continued the preparation of tracings covering the various zones in Arkansas, and prepared for planographing eighteen pencil tracings sent from Texas. During the month a total of 120 tracings were planographed and copies sent out for use in the field.





## Community Education

In cooperation with the Malaria Investigations Office of the National Institute of Health, a two weeks' course in Community Education was held in Memphis at the University of Tennessee Medical School. Ninety-two educators from 13 states were assembled. These educators were employed from the communities in which they will work, and upon completion of the course were assigned to their local health officers through the State health departments.

Members of the MCWA staff and invited speakers from the Army and other government agencies furnished the faculty for the technical material on malaria, with the staff of Field Activities in Public Health Education serving as the faculty for educational techniques.

The direction of the education program is in the Field Activities in Public Health Education section, Division of Sanitary Reports and Statistics, as it was last year (see diagram in December report).

## Aedes aegypti

The aegypti index appeared to be generally low on all projects during June with the exception of the Savannah index, which indicated a sharp rise. This rise was unusual in that breeding was noted not in the large permanent containers as would be expected, but in small miscellaneous type vessels.

Started in the spring as an inspection-correction survey, the New Orleans project will be continued into the next fiscal year as a regular control project.

In Dallas, Texas a special survey was made at the request of city and State health authorities. An aegypti density high enough to warrant control was indicated; however, funds were not immediately available to begin operations.

Hopes faded for complete eradication in Key West, Florida as the breeding index rose from less than 1 percent to over 3 percent.

## Encumbrances

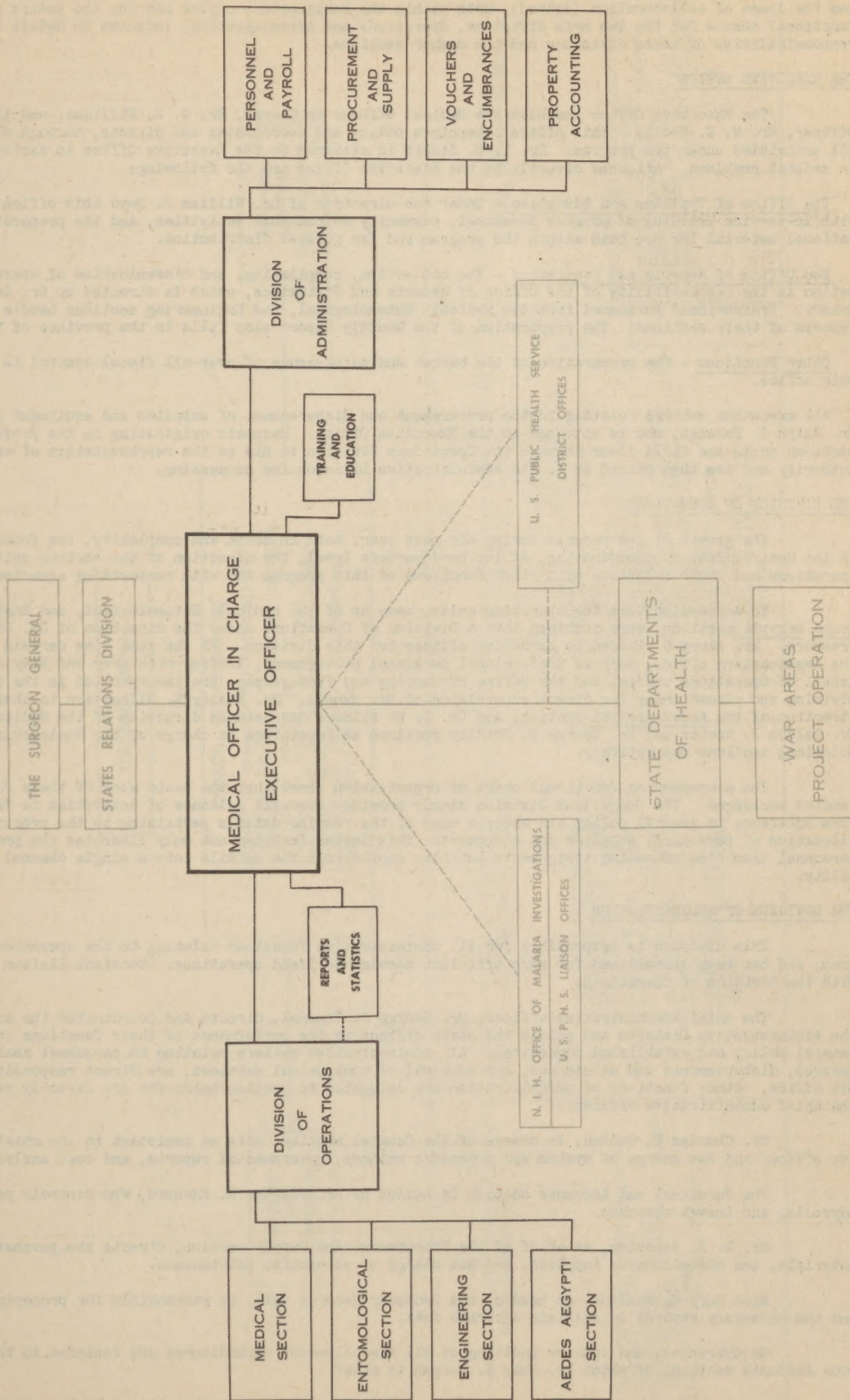
Table IV  
MCWA Encumbrances by Major Items

	June	May	April	Total Fiscal Year 1943
.01 Personal Services	\$441,398	\$431,520	\$489,560	\$5,092,000
.02 Travel	24,211	25,890	21,480	228,000
.03 Transportation	2,046	5,570	3,000	35,000
.04 Communications Services	966	1,250	1,030	12,000
.05 Rent	1,617	1,800	1,650	29,000
.06 Printing and Binding	75	750	400	12,000
.07 Other Contr. Services	22,265	7,170	4,690	64,000
.08 Supplies and Materials	38,689	56,290	47,090	425,000
.09 Equipment	91,189	15,990	10,210	243,000
Sub-total other than Personal Services	181,058	114,710	89,550	1,048,000
Total	622,456	596,230	579,110	6,140,000



# MALARIA CONTROL IN WAR AREAS

ORGANIZATION CHART - HEADQUARTERS OFFICE





## PRESENT HEADQUARTERS OFFICE ORGANIZATION

On the organization chart for the headquarters office are shown the lines of authority (solid lines) and the lines of collaboration (dotted), both within the headquarters office and for the entire program. The functional charts for the two main divisions, Operations and Administration, indicate in detail the duties and responsibilities of these divisions and the member sections.

### THE EXECUTIVE OFFICE

The Executive Office includes the Medical Officer in Charge, Dr. C. L. Williams, and the Executive Officer, Mr. M. D. Hollis. This office determines policy and coordinates and directs, through division chiefs, all activities under the program. Dr. T. H. Stubbs is assigned to the Executive Office to assist principally in medical problems. Attached directly to the Executive Office are the following:

The Office of Training and Education - Under the direction of Dr. William S. Boyd this office is charged with in-service training of program personnel, community educational activities, and the preparation of educational material for use both within the program and for general distribution.

The Office of Reports and Statistics - The collection, compilation, and dissemination of operational information is the responsibility of the Office of Reports and Statistics, which is directed by Dr. Griffith E. Quinby. Professional personnel from the Medical, Entomological, and Engineering sections handle the respective reports of their sections. The preparation of the Monthly Report also falls in the province of this office.

Other Functions - The preparation of the budget and maintenance of over-all fiscal control is exercised by this office.

All executive matters relating to the procurement and disbursement of supplies and equipment are handled by Mr. Ralph C. Palange, who is attached to the Executive Office. Requests originating in the professional sections or in the field clear through the Operations Division to him as the representative of executive authority and are then passed on to the Administrative Division for processing.

### THE DIVISION OF OPERATIONS

The growth of the program during the past year, both in scope and complexity, has focused attention on the desirability of coordinating, at the headquarters level, the direction of the various units involved in operations and their relations with other functions of this program and with cooperating agencies.

To accomplish this the operating units, made up of the Medical, Entomological, and Engineering and *Aedes aegypti* sections, were combined into a Division of Operations under the direction of Dr. Stanley B. Freeborn. Mr. Harry G. Hanson is executive officer for this division. At the same time certain functions of the headquarters office, such as professional personnel procurement, liaison with Army and Navy commands, the Manual of Operations office, and the Office of Mapping and Photography, are incorporated in the Operations Division and placed under the direct supervision of Mr. Hanson. Mr. Wesley E. Gilbertson is charged with the direction of the *Aedes aegypti* section, and Dr. B. K. Milmore has assumed direction of the Medical section. Mr. Nelson H. Rector and Mr. George H. Bradley continue as heretofore in charge of the Engineering and Entomological sections respectively.

The accompanying functional chart of organization shows that the basic work of these four sections remains unchanged. The Operations Division simply provides over-all guidance of activities to facilitate uniform adherence to general policy and absorbs many of the routine details pertaining to the procurement and allocation of personnel, supplies and equipment. This latter function not only liberates the professional personnel from time consuming assignments but also centralizes the details into a single channel of responsibility.

### THE DIVISION OF ADMINISTRATION

This division is responsible for all administrative functions relating to the operation of the program, and has been streamlined for more efficient service to field operations. Constant liaison is maintained with the Division of Operations.

The chief administrative officer, Mr. George B. Tremmel, directs and coordinates the activities of the Administrative Division and guides the State offices in the performance of their functions consistent with general policy and established procedures. All administrative matters relating to personnel assignment, procedures, disbursements and allotments, and approval of contractual services, are direct responsibilities of his office. Other functions of administration are delegated to section heads who are directly responsible to the chief administrative officer.

Mr. Charles W. Cullen, in charge of the General section, acts as assistant to the chief administrative officer and has charge of system and procedure methods, governmental reports, and cost analysis data.

The Personnel and Accounts section is headed by Mr. Charles W. Kannard, who controls personnel, payrolls, and travel accounts.

Mr. E. R. Johnston, as chief of the Procurement and Supply section, directs the purchase of equipment, materials, and miscellaneous supplies, and has charge of automotive maintenance.

Miss Mary E. Moulton, as head of the Property Records unit, is responsible for property accounting, and the necessary records to maintain accurate data.

Encumbrances, and voucher auditing of all miscellaneous expenditures are centered in the Miscellaneous Accounts section, of which Mr. Roex B. Morgan is chief.

Arrangements have been made to effect the payment of vouchers, beginning July 1, by the local Treasury Department Disbursing Office. In most cases the payment of vouchers will be made within ten days after they are received in the headquarters office.



# MALARIA CONTROL IN WAR AREAS

FUNCTIONAL CHART DIVISION OF OPERATIONS

EXECUTIVE OFFICE

**DIVISION OF OPERATIONS**  
GUIDANCE OF OPERATIONS ALONG LINES OF  
GENERAL POLICY  
COORDINATION OF WORK OF MEMBER SECTIONS  
APPROVAL OF PROJECTS  
APPROVAL OF CONTRACTUAL SERVICE  
CONSULTATIONS ON PERSONNEL MANAGEMENT  
PERSONNEL PROCUREMENT  
ALLOTMENT OF EQUIPMENT AND SUPPLIES  
ARMY AND NAVY LIAISON

MANUAL  
OF  
OPERATIONS

MAPPING  
DRAFTING  
PHOTOGRAPHY

**MEDICAL SECTION**  
REVIEW AND RECOMMENDATIONS ON  
PROJECT PROPOSALS  
EPIDEMIOLOGICAL STUDIES  
SUPERVISION AND ANALYSIS OF BLOOD  
SLIDE SURVEYS  
FIELD CONSULTATIONS  
APPROVAL OF MEDICAL REPORTS

**ENTOMOLOGICAL SECTION**  
REVIEW AND RECOMMENDATIONS  
ON PROJECT PROPOSALS  
ESTABLISHMENT OF ENTOMOLOGICAL  
PROCEDURES  
ANALYSIS OF FIELD DATA  
FIELD CONSULTATIONS  
SUPERVISION OF DISTRICT  
ENTOMOLOGISTS  
MANAGEMENT OF FIELD  
PERSONNEL  
ENTOMOLOGICAL SURVEYS  
APPROVAL OF ENTOMOLOGICAL  
REPORTS

**ENGINEERING SECTION**  
REVIEW AND RECOMMENDATIONS  
ON PROJECT PROPOSALS  
TECHNICAL GUIDANCE OF CONTROL  
OPERATIONS  
APPROVAL OF ENGINEERING  
PLANS  
ANALYSIS OF FIELD DATA  
FIELD CONSULTATIONS  
SUPERVISION OF DISTRICT  
ENGINEERS  
RECOMMENDATIONS CONCERNING  
EQUIPMENT, MANPOWER,  
SUPPLIES AND THEIR  
ALLOCATION OF FIELD  
PERSONNEL  
SPECIAL ENGINEERING SURVEYS  
APPROVAL OF ENGINEERING  
REPORTS

**AEDES AEGYPTI SECTION**  
REVIEW AND RECOMMENDATIONS ON  
PROJECT PROPOSALS  
ANALYSIS OF AEGYPTI REPORTS  
FIELD CONSULTATIONS  
SUPERVISION OF MOBILE UNITS  
MANAGEMENT OF FIELD PERSONNEL  
APPROVAL OF AEGYPTI REPORTS



# MALARIA CONTROL IN WAR AREAS

FUNCTIONAL CHART      DIVISION OF ADMINISTRATION

EXECUTIVE OFFICE

**DIVISION OF ADMINISTRATION**  
 DIRECT ADMINISTRATION IN ACCORDANCE WITH  
 GENERAL POLICY  
 COORDINATE ACTIVITIES OF ADMINISTRATIVE  
 OFFICES  
 PROCURE AND ASSIGN PERSONNEL  
 FORMULATE PRACTICES AND PROCEDURES  
 CONTROL ALLOTMENTS  
 APPROVE CONTRACTUAL SERVICES

